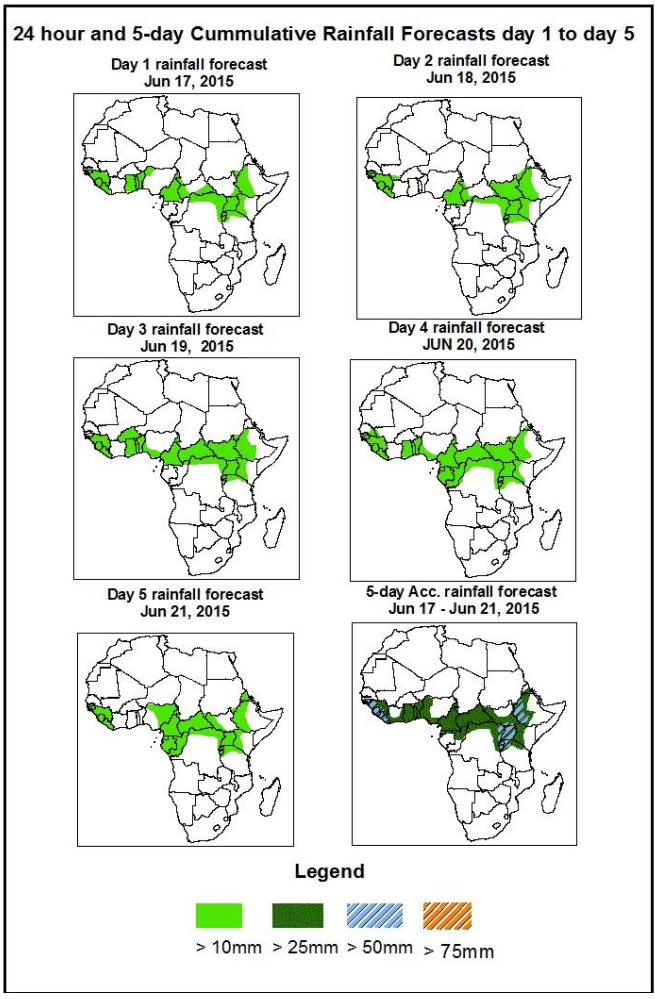
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of June 17 – 06Z of June 21, 2015. (Issued at 1500Z of June 16, 2015)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high probability of precipitation (POP), based on the NCEP/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



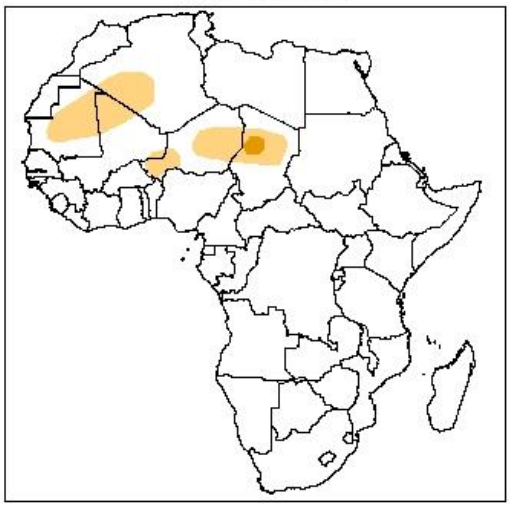
Summary

In the next five days, the monsoon flow from the Atlantic Ocean and its associated convergence across West and Central Africa, combined with westward propagating convective systems across the central Africa, southern Sahel, and the Gulf of Guinea countries, and active lower level wind convergences across northern DRC and parts of the Greater Horn of Africa are expected to enhance rainfall in their respective regions. Thus, There is an increased a chance for heavy rainfall over Liberia, Sierra Leon, Guinea, Car, Cameroon, South Sudan, Uganda, and Ethiopia.

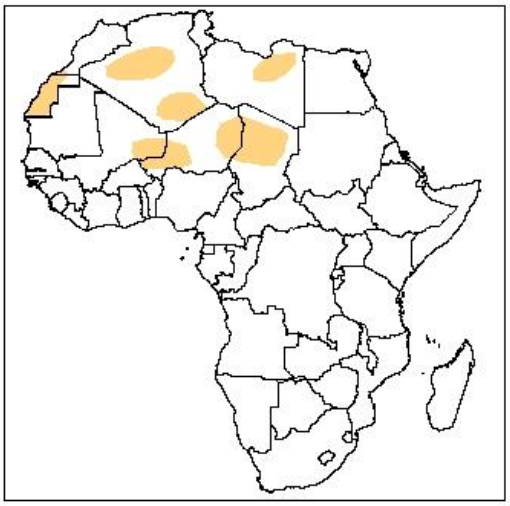
Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

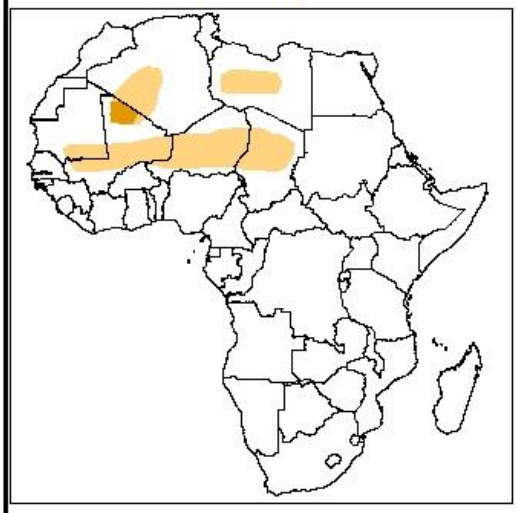
Day 1 Dust forecast
Jun 17, 2015



Day 2 Dust forecast
Jun 18, 2015



Day 3 Dust forecast
Jun 19, 2015



Highlights

There is an increased chance for moderate to high dust concentration over some parts of the Sahel and North African countries with highest dust concentrations over some parts of Chad, and Mali.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion, Valid: June 17 – June 21, 2015

The Azores high pressure system over Northeast Atlantic Ocean is expected to relax through 24 to 120 hours, with its central pressure value decreasing from about 1028hpa to 1024hpa.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to maintain average central pressure value of 1027hpa during the forecast period.

The Mascarene high pressure system is expected to remain over the land across southern Africa countries, maintaining average central pressure value of 1027hpa through 24 to 48 hours. It is then expected to shift eastwards into the Southwest Indian Ocean, with its central pressure value increasing to 1032hpa towards end of the forecast period, according to the GFS model.

The heat low in across Mali and the neighboring places is expected to deepen slightly, with its central pressure value decreasing from about 1006hpa to 1004hpa through 24 to 72 hours.

The northern limit of the 1016hpa isobar associated with the East African ridge is expected to extend northwards up to the latitudes of Kenya during the forecast period.

At 925Hpa level, the monsoon flow from the Atlantic Ocean is expected to prevail across much of the Gulf of Guinea countries, and the neighboring areas of the Southern Sahel and Central African countries. A cyclonic circulation is expected to propagate westwards in the region between northern Mali and Senegal during the forecast period.

At 850Hpa level, east-west oriented wind convergence is expected to remain active across Guinea, Burkina Faso, northern Nigeria, northern Cameroon, CAR and Sudan, with a cyclonic circulation propagating westwards between northern Mali and Senegal during the forecast period. Wind convergences are expected to remain active across northern DRC, South Sudan Republic and portions of Ethiopia during the forecast

period. On the other hand, strong lower level wind associated with the Somali Jet is expected to remain along the East Africa coast and the neighboring areas of northwestern Indian Ocean and the Arabian Sea.

At 700hpa level, northeasterly to easterly flow is expected to prevail across the Gulf of Guinea and Central Africa countries.

At 500Hpa level, a zone of strong easterly flow (>30kts) is expected to prevail in the region between southern Mali and northern Niger through 72 to 120 hours.

In the next five days, the monsoon flow from the Atlantic Ocean and its associated convergence across West and Central Africa, combined with westward propagating convective systems across the central Africa, southern Sahel, and the Gulf of Guinea countries, and active lower level wind convergences across northern DRC and parts of the Greater Horn of Africa are expected to enhance rainfall in their respective regions. Thus, There is an increased a chance for heavy rainfall over Liberia, Sierra Leon, Guinea, Car, Cameroon, South Sudan, Uganda, and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

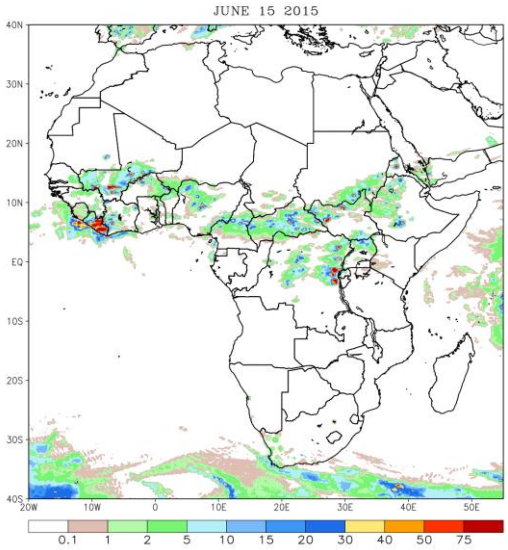
(15 – 16, June 2015)

2.1. Weather assessment for the previous day (June 15, 2015)

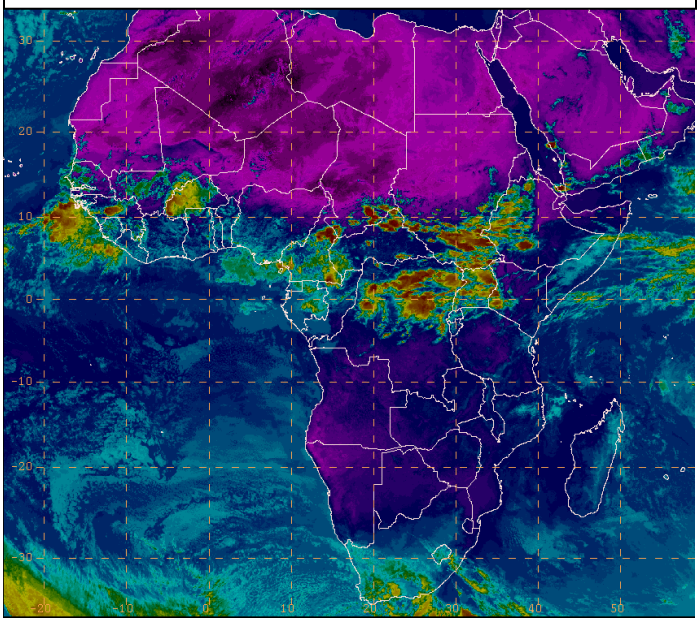
Moderate to heavy rainfall were observed across Mali, Guinea, Liberia, Ivory Coast, Nigeria, Cameroon, Uganda, CAR, DRC, South Sudan, and Ethiopia.

2.2. Weather assessment for the current day (June 16, 2015)

Intense convective deep clouds are observed over guinea, Burkina Faso, CAR, South Chad, DRC, South Sudan, Uganda, and Ethiopia.



IR Satellite Image (valid 1425Z of Jun 16, 2015)



Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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